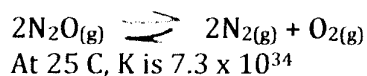


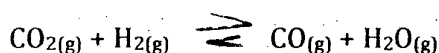
4. Consider the decomposition of nitrous oxide, laughing gas,



- Based on the information given, what can you say about the rate of decomposition of the reaction? *Doesn't produce a lot of product, large K value*
- Based on the information given, does nitrous oxide have a tendency to decompose into nitrogen and oxygen?

Yes it does

5. Consider the following reaction



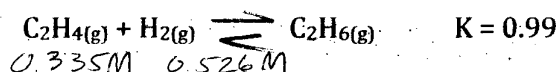
Calculate the value of the equilibrium constant, K, for the above system, if 0.1908 moles of CO_2 , 0.0908 moles of H_2 , 0.0092 moles of CO , and 0.0092 moles of H_2O vapour were present in a 2.00 L reaction vessel at equilibrium.

Doesn't matter if you divide both numerator & denominator by 2, you'll get the same value.

$$K = \frac{(0.0092)(0.0092)}{(0.1908)(0.0908)}$$

$$K = 0.0049$$

6. Consider the following reaction



What is the concentration for each substance at equilibrium if the initial concentration of ethane, $\text{C}_2\text{H}_{4(g)}$, is 0.335 M and that of hydrogen is 0.526 M?

$$K = \frac{[\text{C}_2\text{H}_6]}{[0.335][0.526]}$$

$$0.174 \text{ M} = \text{C}_2\text{H}_6$$